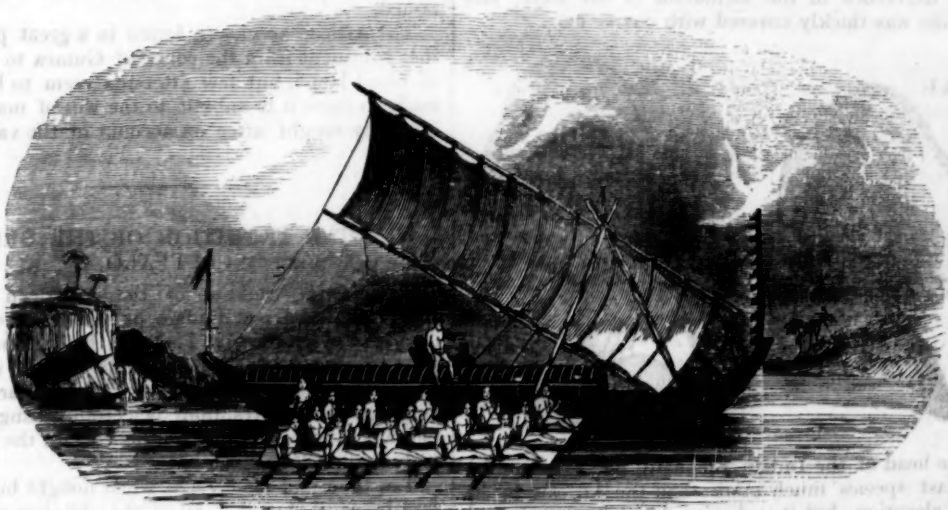


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A BRIEF HISTORY OF NAVIGATION PART III.



A CARACOLE.

THE NAVIGATION OF THE MIDDLE AGES.

THE ARABIANS.

THE details, which have hitherto occupied our attention on the subject of Navigation, have had reference generally to periods prior to the final overthrow of the Roman empire, an event which has formed one of the most remarkable eras in the history of the world. It is scarcely too much to say, that, when the Roman empire was at the zenith of its greatness, the whole known world was subject to its sway; for we shall remember that the term "*known world*," will have a different signification at different times. America was then unknown:—Africa was then unknown, except those countries bordering on the Mediterranean and Red Seas; and also those countries which now rank for local extent as the largest in the world—India, China, and Russia, were almost entirely unknown in those times; so that nearly all, which were recognized as inhabitable and inhabited countries, were under Roman domination.

This gigantic power had, however, the seeds of dissolution within itself. Distant provinces could not be governed without the maintenance of armies in such numbers, and of such vast extent, that the mother country was first drained, and then served only by foreigners; and all the useful arts, whether agricultural, or otherwise, fell into decay. Besides this, the aspiring ambition of the different generals frequently led them to assume sovereignty on their own account, and to shake off the authority of the country which sent them out. The scriptural expression, that "a house, divided against itself, falleth," was fully verified in the case of the Roman empire; for the want of unity of purpose and of combined operation weakened this overgrown empire, and made her an easier prey to the barbarians of the north-east of Europe.

We shall now continue our sketch of the progress of naval affairs, from about the beginning of the sixth century.

About this period, the eastern, or Constantinopolitan portion of the dismembered Roman empire, was assailed by the Saracens, a nation occupying a portion of what is now called Arabia. Mathuvius, a Saracen chief, fitted out a powerful fleet and conquered the island of Cyprus in the Mediterranean, which had formerly belonged to the eastern empire, and then seized upon the island of Rhodes, from whence he

conveyed away the materials, of which the famous Colossus of Rhodes had been formed. This stupendous figure was made of brass, and passed for one of the seven wonders of the world. Its feet were upon the two moles at the entrance of the harbour, and ships passed in and out in full sail beneath it. It was about one hundred and five feet high. It did not stand many years before it was overturned by an earthquake, 224 B.C.: and, as the Rhodians had a superstitious opinion that it should never afterwards be used for any other purpose, they allowed the fallen statue to remain on the ground: the Saracens, however, had no such scruples; they broke up the statue, and loaded nine hundred camels with the metal, which they sold to a Jewish merchant for 36,000*l.* English. It is related of this image, that a winding stair-case ran to the top, from which the distant shores of Syria, and the ships of Egypt as they traversed the bay of Alexandria, could be discerned by means of glasses suspended from the neck of the statue. It had remained in ruins for nearly 900 years, although the people of Rhodes had collected large sums of money for its repair. This money, however, they seem to have appropriated; which was, perhaps, the true reason why they feigned or felt reluctance to raise up the image, and pretended that the oracle of Delphi forbade it.

When the Arabians, in their rapid career of conquest, had reached the Euphrates, they immediately perceived the advantages to be derived from an emporium situated upon a river, which opened on the one hand a shorter route to India than they had hitherto had, and on the other, an extensive inland navigation through a wealthy country; and Bassora, which they built on the west bank of the river, A.D. 636, soon became a great commercial city, and entirely cut off the independent part of Persia from the Oriental trade. The Arabian merchants of Bassora extended their discoveries eastward, far beyond the tracks of all preceding navigators, and imported directly from the place of their growth, many Indian articles, hitherto procured at second hand in Ceylon; which they accordingly furnished on their own terms to the nations of the West.

The victorious Arabs, by these events, had now deprived Heraclius, the emperor of the East, of the wealthy, and in some degree, commercial province of Syria. The little commerce now remaining to the Roman empire also fell

into their hands, with the city of Alexandria and the province of Egypt; and the road from Egypt to Medina was covered by a long train of camels, loaded with the corn which used to feed the city of Constantinople.

A few years afterwards, the ancient canal between the Nile and the Red Sea is said to have been cleared out, and again rendered navigable, by Amrou, the Arabian conqueror and governor of Egypt, in order to furnish a shorter and cheaper conveyance for the corn and other bulky produce of the country.

Fresh attempts were also made by these people to connect the Mediterranean and Red Seas by means of a navigable canal; a purpose sought to be accomplished in various ages of the world, by people who have given their attention to maritime affairs. The continent of Africa is a peninsula, connected with Asia by the Isthmus of Suez, which is about sixty miles long, and consists of sand. Many thousands of human beings have perished at different times in labouring to cut through this neck of land. The Ptolemies of Egypt, the Greeks, the Romans, and the Saracens, have all attempted, but failed, to effect the object. The French, when in Egypt, traced out the ancient line; and the union of the two seas has been deemed, in modern times, to be quite feasible; and many plans have been proposed for resuming the work.

A long series of naval operations, in which the Saracens were concerned, succeeded, which we need not detail; but about the year 670, the Arabians, or Saracens, whose fleets now rode triumphant in the Mediterranean, and who had already taken possession of Cyprus, Rhodes, and many of the Grecian islands, laid siege, for the first time, to Constantinople. For seven years they annually renewed the siege by sea and land, with varying success, but were ultimately repulsed, after the loss of 30,000 men and most of their ships. Their defeat was, in a great measure, brought about by the invention of a peculiar mode of offensive warfare, called the *Greek fire*; which was then used for the first time by Callinicus, a Syrian Greek. Gibbon supposes that it consisted principally of naphtha, a kind of liquid pitch, which springs out of the earth, and catches fire when a light is applied to it: this was mixed with sulphur, and a kind of turpentine extracted from evergreen firs. Sometimes it was poured down from the ramparts from large boilers; sometimes javelins and arrows were wrapped round with tow dipped in this mixture; and at other times it was deposited in fire-ships, from which it was, by some contrivance, blown upon the enemy through long tubes. When once kindled, nothing could stop the flame: water fed, instead of damping it. The secret of its composition was not known to other nations for four hundred years.

A. D. 730. The Christians of Europe were excluded from almost every channel by which the precious goods of the East had formerly been conveyed to them. An inveterate antipathy, heightened by mutual slaughters, and inflamed by religious bigotry, which made the Christians consider the Mahometans as the enemies of God, while they, on the other hand, abhorred the Christians as infidels, was almost an insuperable bar to commercial intercourse. But the mutual alienation produced little or no inconvenience to the Saracens, who found an ample scope for commercial enterprise within the vast extent of their own dominions. The scanty supply of oriental goods from the fairs of Jerusalem, and perhaps a few other privileged places, being very inadequate to the demand, some Arab merchants were tempted by the increased price, to traverse the vast extent of Asia in a latitude beyond the northern boundary of the Saracen power, and to import by caravans the silks of China, and the valuable spices of India; which, with the expense and risk of such a land carriage, must have cost a most enormous price when they reached Constantinople, where they were, notwithstanding, eagerly purchased by the luxurious and wealthy courtiers, whose demands for silk the manufacturers of Greece were not capable of supplying to their full extent.

About the year 850, Solymán, an Arabian merchant, wrote an account of the state of the maritime commerce between the Arabians, Chinese, &c., from which we obtain the following particulars.

The Arabian merchants had, by this time, extended their commerce and their discoveries in the East, far beyond the utmost knowledge of their own ancestors, the Greek merchants of Egypt, or the Ethiopian merchants of Aduli. Their vessels now traded to every part of the Asiatic continent, as far as the south coast of China, and to many of the islands. Solymán gives the following account of the Chinese, of

whom scarcely anything was at that time known to the western world. "When foreign vessels arrive at Can-fu, (supposed to be Canton,) the Chinese take possession of their cargoes, and store them in warehouses till the arrival of all the other ships which are expected, whereby they are sometimes detained six months. They then levy a tax of thirty per cent. on the goods in kind, and restore the remainder to the merchants. The emperor has a right of pre-emption, but his officers, fairly and immediately, pay for what he takes at the highest price of the articles. Chinese ships trade to Siraf by the Persian Gulf, and there take in goods brought from Bassora, Oman, and other places, to which they do not venture to proceed on account of the frequent storms and other dangers in that sea." From the account of their route, which is constantly along the shore, the Chinese of this age appear to be rather more timid navigators than the Arabs and Egyptian Greeks were, many centuries before. Sometimes there were four hundred Chinese vessels together, in the Persian Gulf, loaded with gold, silks, precious stones, musk, porcelain, copper, alum, nutmegs, cloves and cinnamon.

At the period to which these accounts refer, the Arabians had removed their principal seat of commerce almost entirely to the Persian Gulf.

We should observe here, that Oman is the most eastern part of Arabia, whence the Gulf of Persia, which separates Persia from Arabia, is sometimes called the Gulf of Oman. It is sometimes called the Green Sea, from the appearance of its water. Beautiful pearls were obtained from these parts, to which the poet alludes in the mournful song of the Peri:—

Farewell—farewell to thee, Arab's daughter!
(Thus warbled a Peri beneath the dark sea;)
No pearl ever lay, under Oman's green water,
More pure in its shell than thy spirit in thee.

Here also was said to be found the star-fish, which was luminous, referred to by the same poet of Nature, when singing the dirge

Of her, who lies sleeping among the pearl islands,
With nought but the sea-star to light up her tomb.

The western boundary of Arabia was the Red Sea, the strait or passage into which was termed by the old Asiatic navigators, "*the gate of tears*:" for, owing to the danger of the navigation in these parts, and the many shipwrecks which occurred, the early Arabians reckoned as dead, and were mourning for, all who had the boldness to hazard the voyage through it into the sea north of the Indian Ocean.

It is curious also to observe that, according to the reports of the ancient Arabs, the whale was formerly a frequent visitor of the Persian Gulf. It is narrated by some navigators that they saw there the strangest sight which they had ever beheld, which was the head of a fish, "that might be compared to a hill: its eyes were like two doors, so that people could go in at one eye and out at the other." When the Grecians under Nearchus, as noticed in our former paper*, had an opportunity of measuring a whale in these parts, they found it to be about ninety feet long, with a hide almost two feet thick, covered with shell-fish, barnacles, and sea-weeds, and attended by dolphins larger than they had seen in the Mediterranean.

The west side of the Red Sea appears, about the end of the ninth century, to have been deprived of all foreign trade. The vessels from Siraf by the Persian Gulf, (and we hear of none from India,) delivered their cargoes at Judda, or Jidda, an Arabian port, which appears to have been not used when the Periplus of the Erythrean Sea was written. From thence the goods destined for Egypt, Europe, and Africa, were forwarded in vessels conducted by people acquainted with the navigation of the Red Sea, the many dangers of which deterred the foreign navigators from proceeding any further in those parts. We are told that the Red Sea coasters carried the goods to Cairo, which had now superseded Coptos, as the general deposit of merchandize upon the Nile; and if that be strictly true, the vessels must have proceeded through the canal, which was restored by Amrou, the Arabian conqueror of Egypt. Thus we find the trade of the Red Sea nearly fallen back to the state in which it was under the first Ptolemies; and also, if we except the conveyance by the canal, nearly in the state in which it has been for several hundred years past. The efforts which are now making, however, by the English, and by the enterprising Pacha of Egypt, to render the Red Sea a channel of communication between Europe and the East, promise to make those regions once more a busy scene of naval traffic.

* See Saturday Magazine, Vol. X.I., p. 205.

The Saracens continued for a long period to maintain a naval superiority in the Mediterranean, whether for the purposes of war or of commerce. Some of the Saracenic vessels were of a very large size. About the year 970, Abderahman, the Saracen Sultan or Caliph of the greater part of Spain, built a vessel larger than had ever been seen before in those parts, and loaded her with innumerable articles of merchandize, to be sold in the eastern regions. On her way she met with a ship carrying despatches from the emir of Sicily to Almoez, a sovereign on the African coast, and pillaged it. Almoez, who was also sovereign of Sicily, which he governed by an emir or viceroy, fitted out a fleet, which took the great Spanish ship returning from Alexandria, loaded with rich wares for Abderahman's own use. Many other instances of ships of a very large size having been constructed by the Saracens, have been recorded; and it has been suggested as probable, that it was in imitation of those ships that the Christian Spaniards introduced the use of large ships, for which they were distinguished down to the time of Philip the Second, whose "Invincible Armada" consisted of ships much larger than the English vessels opposed to them.

As an instance of the depressed state of human knowledge during the middle ages, we may mention that Cosmas, a Greek merchant of the sixth century, wrote a book called *Christian Topography*, the chief intent of which was to confute the heretical opinion of the earth being a globe, together with the pagan assertion that there was a temperate zone on the southern side of the torrid zone. He informed his readers that, according to the true orthodox system of cosmography, the earth was a quadrangular plane, extending four hundred courses, or days' journeys, from east to west, and exactly half as much from north to south, enclosed by lofty mountains upon which the canopy or vault of the firmament rested: that a huge mountain on the north side of the earth, by intercepting the light of the sun, produced the vicissitudes of day and night; and that the plane of the earth had a declivity from north to south, by reason of which the Euphrates, Tigris, and other rivers running southward are rapid; whereas the Nile, having to run up-hill, has necessarily a very slow current. Many other specimens of the blending of truth and fiction, or of the propagation of the latter alone, may be afforded. Masudi, who wrote a general history of the known world in the year 947, compares the earth to a bird, of which Mecca and Medina are the head, Persia and India the right wing, the land of Gog the left, and Africa the tail.

But the most celebrated of the Arabian geographers was Al Edrisi, who flourished in the twelfth century. He divides the world into seven climates, beginning with the equator and going northwards; these climates are distinguished by lines running from west to east, which resemble the lines of latitude on a modern map or globe. The mechanical division of the earth into climates was continued for many ages, until the accuracy of modern science came to adopt the parallels of latitude for marking off breadths on the earth's surface. This geographer supposed the earth to float in the ocean "like an egg in a basin of water." By his system he showed

..... the world
Built on circumfused waters calm, in wide
Crystalline ocean.

This ocean was considered, according to the prevalent notion, to be surrounded by clouds and thick darkness. He further says that, owing to the impossibility of passing the equator by reason of the heat, the known world consists of only one hemisphere, partly land and partly sea, all which is surrounded by the great sea, or ocean, as has just been mentioned.

During these ages the Arabs visited the Chinese and the far-off nations of the East; and accounts of their intercourse with these people are handed down by various authors. These relations embrace not merely mercantile affairs, but observations of life and manners. One writer, speaking of the use to which the cocoa-nut is applied, says, "There are people at Oman, who cross over to the islands (the Laecendes) that produce the cocoa-nut, carrying with them carpenters and all such tools; and having felled as much wood as they want, they let it dry, strip off the leaves, and with the bark of the tree they spin a yarn, wherewith they sew the planks together, and so build a ship. Of the same wood they cut and round away a mast; of the leaves they weave their sails, and the bark they work into cordage. Having thus completed their vessel, they load her with cocoa-nuts, which they bring and sell at Oman. Thus

from the cocoa-nut tree alone so many articles are convertible to use, as suffice not only to build and rig out a vessel, but to load her when she is completed and in trim to sail." The preparation of thread from the fibres of the cocoa-nut was a great source of trade with many of these islands. The nut is softened in water, and afterwards beaten with a mallet till it becomes quite flexible, when the fibre is spun out and twisted into ropes. The thread was used in compacting the ships of Arabia and India.

The ships of India were, in old times, launched by means of elephants. It is related that one of these animals, being directed to force a very large vessel into the water, found the task exceed his strength; whereupon his master, in a severe tone, ordered the keeper to take away the lazy beast and bring forward another: the poor animal upon this instantly renewed his efforts, and in so doing fractured his skull and died upon the spot.

The Arabians seem to have carried their exploratory endeavours into all regions and in all directions. Russia and its inhabitants are described, as people of more modern times have found them in the earlier state of their civilization. The daring of the Arabs was bounded by the Northern Ocean, which they termed "the sea of pitchy darkness." India was visited regularly, and the Hindoos served in a nautical and commercial relation, for the Hindoos had a superstitious horror of the sea. The interior parts of Africa likewise were sought out and described; and although fable may have insinuated itself into the more voracious narrative of the geographer and historian, yet enough remains to make us believe that attempts were made, if not absolutely followed up by success, to proceed on westward, and to reach some strange, wonderful, and immeasurably distant regions, which should be an eternal recompense to the daring and skilful mariners who should guide their prow to those shores.

There belong to Welsh history some traditions respecting the adventures of Madoc, a prince of North Wales, who is said to have first discovered America at the latter end of the twelfth century. Owing to certain domestic contentions about the sovereignty, Madoc determined, as runs the thread of these traditions, to go out voyaging to a great distance, when he had procured men and ships with all necessaries. The ancient Britons were said to be very proficient in the art of navigation and all things pertaining thereunto. When they had been many weeks at sea, and had been much tossed about, they, at length, to their great joy, discovered land, which seemed at first sight like a cloud resting upon the distant waters. Seeing that it was quite steady, they concluded it to be land, and sailing towards it found it to be a fertile and pleasant country. Here they settled, and in course of time Madoc returned to Wales, and brought from home fresh men and ships, by means of which he stocked the country, and they all settled there; and he and the other adventurers were subsequently forgotten by the mother-country.

It is supposed that the part of the world which Madoc arrived at was a part of the vast continent of America, which the Spaniards appear to have afterwards first found out. The especial reason, which induces the moderns to consider the story of Madoc to be essentially true, is that so many of the words used by the Indians of those regions were found to be similar in sound and signification to the Welsh; this has led to those people being called Welsh Indians. They live about the fortieth degree of north latitude, and have been thrown back more westward by the encroachments of the Americans of the States. They were originally called Padoucas, or White Indians. We will now turn to the very remarkable narrative of Lieutenant Roberts, which, being coupled with the tradition cited above, will help us a good way to account for the early populating of America.

"In the year 1801," says he, "being at Washington, in America, I happened to be at a hotel smoking my cigar, according to the custom of the country, and there was a young lad (a native of Wales), a waiter in the house, who displeased me by bringing me a glass of brandy and warm water instead of cold. I said to him jocosely, in Welsh, 'I'll give thee a good beating.'

"There happened to be at the time in the same room one of the secondary Indian chiefs, who, on my pronouncing these words, rose up in a great hurry, stretching forth his hand at the same time; and the chief said that it was likewise his language, and the language of his father and mother, and of his nation. 'So it is the language of my father and mother, and of my country.' Upon this the



ANGLO-SAXON SAILOR'S HAMMOCK.

Indian began to inquire from whence I came? I replied, 'from Wales;' but he had never heard a word about such a place. I explained that Wales was a principality in a kingdom called England. He had heard of England and of the English, but never of such a place as Wales.

"I asked him if there were any traditions among them from whence their ancestors had come. He said there were; and said that they had come from a far distant country, very far in the East, and from over the great waters. I conversed with him in Welsh and in English; he knew better English than I did, and I asked him to count in Welsh. He immediately counted to a hundred or more. He knew English very well, because he was in the habit of trading with the English Americans. Amongst other things, I asked him how they came to retain their language so well from mixing with the languages of other Indians. He answered, that they had a law, or an established custom in their country, forbidding any to teach their children another language until they had attained the age of twelve years, and after that age they were at liberty to learn any language they pleased. I asked him if he would like to go to England or Wales. He replied that he had not the least inclination to leave his native country, and that he would sooner live in a wigwam than in a palace. He had ornamented his arms with bracelets, and on his head were placed ostrich feathers.

"I was astonished and greatly amazed when I saw and heard such a man, who had painted his face of a yellowish red, and of such an appearance, speaking the language as fluently as if he had been born and brought up in the vicinity of Snowdon. His hair was shaved, excepting round the crown of his head, and there it was very long and neatly plaited; and it was on the crown of the head he had placed the ostrich feathers which I mentioned before, to ornament himself."

The foregoing description, though not strictly applying to the labours of the Arabs, has been introduced, a little in advance of its proper place; for a taste for Western discovery certainly was common at one time among the Arabs, and the sea-girt countries of Europe, about seven or eight hundred years ago.

Two Arabian geographers, Ibn El Vardi and Al Edrisi, who is mentioned before, give a curious account of a voyage made on the Atlantic Ocean or Sea of Darkness, by the *Almagurim*, or the *Wanderers*. It appears from the Arabian narratives that these persons determined to find the ends of the ocean, and the great western regions, which seems to have been, in the European parts of the world, the great and mystic goal of daring. This voyage took place about the middle of the twelfth century, and therefore just before Madoc's. They set out from Lisbon, and kept sailing straight on to the west, in a vast and deep sea, for twenty-three days, when the wind took them southward to the Sheep-Island. The flesh of the sheep on this island was too bitter to be eaten. But having refreshed themselves at this place and taken in water they kept on to the south, and arrived among some red Indians, as it has been supposed, whose chief dissuaded them from pursuing any further the horrors of the gloomy sea, which lay to the west. Upon this they returned to Lisbon; not having, in fact, carried their voyage, as most people reasonably believe, beyond the Azores, and then southward, the Madeira and Canary Islands. They reported upon their return, that they had been visited with a storm, wherein they had lost



SAIL-MAKER, FROM AN OLD FRENCH PRINT.

the light of day,—that they had reached the gloomy extremities of the world,

....., where bounds were set
To darkness, such as bound the ocean-wave.

Ibn Batuta, who set out on his travels at the beginning of the fourteenth century, has left an interesting account of his perambulations by land. But, as these do not come within the scope of our subject, we must omit them, and take up with those parts of his narrative, which appertain to maritime affairs. Having been despatched from Delhi as ambassador to China, he notices the Chinese junks at Calicut, which is in the south-western part of Hindostan. The description, which he leaves of these vessels, is applicable to them, both in past and present times; and is held to be very accurate. "The sails of these vessels are made of cane reeds, woven together like a mat; which, when they put into port, they leave standing in the wind. In some of these vessels there will be a thousand men, six hundred of them sailors and the remainder soldiers. Each of the larger vessels is followed by three others of inferior sizes. These vessels are nowhere built except in the farthest ports of China. They are rowed with large oars, which may be compared to great masts, over some of which five and twenty men were stationed, who work standing. The commander of each vessel is a great emir. In the large ships, too, they sow garden-herbs and ginger, which they cultivate in cisterns ranged along the side. In these also are houses constructed of wood, in which the higher officers reside with their wives: every vessel is, therefore, like an independent city. Of such ships as these Chinese individuals will sometimes have large numbers, and, generally speaking, the Chinese are the richest people in the world."

These junks are almost innumerable on all the rivers and canals of the Chinese empire. The cane, referred to by Ibn Batuta, was the bamboo, of which the masts and arms were formed. These vessels do not sink more than a foot or half a yard into the water. They, are, however so ill contrived for sea, that it is wonderful how they can complete a voyage. The head is square, the bottom flat, having no keel, nor bow-sprit. The sails are lowered by the men treading them down with their feet. This craft is highly ornamented with dragons' heads, ugly mouths, and staring eyes, and does not usually venture upon a voyage farther than the Molucca or Spice Islands, and Port Jackson.

It is worthy of remark that the mountains of Lebanon, which had furnished timber for building the ships of Tyre and Sidon, in the infancy of navigation, were still the great nursery for ship-timbers, in the seventh and eighth centuries of the Christian era: vast stores of this timber being collected on the coast of Phœnicia by the Saracens, for building their fleets.

Before we take leave of this general account of the nautical proceedings of the Arabians, we have to observe that, in addition to the pursuit after land lying at the extremity of Atlantic darkness, a still greater object of curiosity to the Saracens, or Arabs generally, was the seat of Gog and Magog. All that we can in fact learn about these objects from the early history of the Bible and from Scriptural aids, is, that they were terms, implying a mighty race of cannibals on the shores of the Euxine and Caspian seas. In the Guildhall of London they stand as awful giants,—said to be twin-born, inseparable in name and estimation. These notions were derived from the fancies of the Orientals, who

* See *Saturday Magazine*, Vol. X., p. 162.

supposed that Gog and Magog had impregnable castles on the borders of Scythia. As the alchemist sought after the philosophers' stone, and the youth-restoring draught; as the astrologer computed the fates and fortunes of individuals and of states by the aspects of the heavenly bodies; and as the mechanician amused himself by seeking the perpetual motion, so also the Arabian navigators were anxious to explore the ideal abodes of these monstrous productions of antiquity. But, as the alchemist by his labours indirectly advanced the knowledge of chemistry—as the astrologer unwittingly furthered the progress of astronomy,—and as the seeker after perpetual motion increased the knowledge and practice of mechanics by his contrivances to attain perpetual motion—so the Arabian navigator enriched the knowledge of geography by his careful though futile search after mere creatures of the imagination. In fact, the search for Gog and Magog was at this time, about six or seven hundred years ago, part of the romance of navigation, which was indirectly beneficial to nautical science and a knowledge of the world: for, wherever the Arabs gave their attention to make observations, geographical knowledge was enlarged; and it is to be regretted that their religious bigotry deterred them from visiting and examining those nations, whose faith differed from their own.

The prosecution of the search after Gog and Magog was at this time an object of the greatest care and anxiety to the government of Bagdad. They hoped at first to find the residence of these giants on the shores of the Caspian Sea; but having conquered this country without discovering any trace or vestige of the castles of these awful beings, they turned to the more southern countries, which when they had explored with the greatest care and attention, they were reduced to excessive perplexity. Another mission was sent out, (we are told by Al Edrisi,) with strict orders to spare no pains to discover the castle of Gog. The people of this mission proceeded along the shores of the Caspian, then over a vast desert, where they met with a stupendous range of mountains, supposed to be the Altaian. Here, according to their report, they actually found the castles of Gog and Magog. It has been supposed that they discovered some of the ancient monuments which have since been seen among these mountains, and that thus they readily jumped to the conclusion that these were at least the ruins of what they sought; incited also, perhaps, by a wish to come to the conclusion of a task so strange and dangerous. The account they gave of the fortress of the giants was such as to impose upon those to whom they had to relate it, and was decked with all the hyperbolic garnishing of eastern imaginations. The castle had walls of iron and was of an enormous magnitude. The iron was cemented with brass. The gates were ninety feet high, and fastened with bolts and bars of a tremendous size. Everything else was related after a similar proportion; and thus the Arabian authorities were satisfied: having demanded wonder they received it; and their minds went to rest, when their fancies had been tickled. In all the maps of Asia for ages after, the castle of Gog and Magog appeared of an imposing aspect at the northern boundary.

THE ENGLISH.

NEXT in order, we must notice the history and general proceedings of our ancient countrymen in nautical affairs for a few hundreds of years, taking notice, in the course of our narrative, of the other distinguished nations of Europe, which, by their nautical skill and enterprise, as also by their commerce, increased the geographical knowledge of the world, and contributed to the comfort and well-being of the human race.

The British ships, which vainly strove to oppose the progress of Julius Cæsar, were made with bottoms flatter than the Mediterranean vessels, in order to accommodate themselves to a tide harbour and a shoal coast; and they were elevated both at the prow and the poop, which was deemed better adapted to resist a stormy sea. They were constructed wholly of oak; the anchors were secured by iron chains, instead of the cables which had been previously used; and the sails were made of skins and thin leather, probably from an opinion that a weaker material would not stand the force of the wind. The elevated poops of the British vessels gave them an advantage over the Roman galleys, by furnishing a higher standing-place, from which missiles could be directed at the Roman galleys. The oak construction of the British vessels also afforded a successful resistance to the collision of the beaks of the galleys against their sides, and the only way in which Cæsar was enabled to capture these vessels was the following:—the Roman soldiers fitted sharp bill-hooks at the end of long poles, and catching hold of the ropes which fastened the sails of the British vessels to the mast, cut them asunder, and thus rendered the sails useless.

These were the British war-ships at the period of the Roman invasion, but the natives used to cross the English and Irish Channels in vessels constructed of wicker-work, and covered with skins. Boats called *coracles*, very much resembling them in form, and which we noticed in our first paper*, are in use at the present day on the Severn, and some of the rivers in Wales; and they are so light that, when the fisherman lands, he takes his boat out of the water and carries it home on his back. Dr. Southey says,—"Several canoes have been dug up in Lincolnshire, all of oak, and remarkable for the free grain of the timber; so that the millwrights and carpenters who examined it, declared that, in their opinion, it was of foreign growth, and the produce of a warmer country. But that the canoes could not have been brought there from any warmer country seems certain: and if any inference can be drawn from the grain of the wood, as indicating its growth in a warmer climate, it would seem to be, that these canoes were made when the climate of the island was warm enough for elephants, hyænas, tigers, hippopotami, and other inhabitants of southern countries, whose remains have been brought to light here."

In like manner, we are told, the Saxon pirates, who cruised in the German Ocean, and subsequently invaded Britain, had ships made with a wooden keel, the sides

* See Saturday Magazine, Vol. XII., p. 34.



ANGLO-SAXON SHIP.



NORMAN SHIP.

being of wicker, with an exterior of hides. The *batswan*, or boatswain, had a wand in his hand to direct the motion of the rowers.

During the sanguinary conflicts in which the Britons were engaged, first with the Romans, then with the Picts and Scots, and afterwards with the Danes and Saxons, it does not appear that any great change was made in the form or management of their war-galleys. When Alfred the Great had routed some of the Danish invaders, they resolved to harass the coast of Wessex by sea, in revenge for the defeats they had met with by land. These predatory expeditions were made in vessels called *æscs*. The general boats of the Danes were broad-bottomed, but, unlike the early British boats, their keels were framed of light timber, and the sides and upper works were of wicker, covered with strong hides; they were, in fact, coracles of a larger size, and with wooden keels. The *æscs* were superior to these, and indeed to Alfred's ships, for he ordered the latter to be made twice as long as the former, in order to be placed on an equality with them. Some of the *æscs* had upwards of sixty oars, and were swifter, higher, and steadier than the coracles.

The character of the fierce and ruthless Danes, who, for so long a period, harassed the unhappy inhabitants of Britain, forms a very remarkable instance of what different members of a family are obliged to do, when the eldest son assumes the power and wealth of the father. In our own days, we know that it is customary, in eastern countries, for a sultan, as soon as he ascends his throne, to cause all his brothers to be put to death, in order that they should offer no opposition to his retention of the crown. This cruel and sanguinary line of conduct, although more directly wicked and censurable, was not, ultimately, more productive of evil than was the plan adopted among the early Danes. The shores of the Baltic Sea were parcelled out into a number of petty territories, each of which had its chief or sovereign. When a son of any one of these chiefs succeeded his father on the throne, his brothers had each a vessel given to them, in which they were to seek their fortunes: they became a sort of pirates, and, under the name of Vikings, they became the terror of surrounding countries. So hardy and ferocious were they, that it was a proud boast of theirs, that they never slept under a roof, and never ate by a fireside. Their vessels used to scour the Baltic and the German Ocean, and bring devastation to all around. Thus we see that the first employment of the German Ocean, as a field for navigation, was to bear the rude vessels of lawless marauders, who were equally indifferent to the laws of God and of man. They have formed the heroes of many a Northern romance, under the general title of *Sea-Kings*. The Danes and Norwegians, generally, in the early accounts of nautical and predatory excursions, come under the denomination of *Northmen*.

The piratical adventurers of the northern coasts of Europe doubtlessly advanced the maritime art somewhat in the first centuries of the Christian era, and in time lent their assistance to the different governments, who needed and sought the aid of those who were acquainted with the deep sea, and the means for traversing it. Offa, one of the Saxon kings, got together a very fair fleet, and made himself so formidable, that Charlemagne, king of France, who had been hostilely disposed towards him, now sought his friendship and alliance. His successors took no heed to keep up this fleet, and thus suffered the country to be exposed to the piratical attempts of the Danes, who robbed and murdered the English, and settled where they pleased. The facility with which the Danes landed and effected their purposes of pillage and slaughter, shows that the English, up to the time of Alfred, in the ninth century, were very ignorant, or very regardless, of maritime affairs. King Alfred, seeing that the most effectual method of repressing the inroads of the Danes was to meet them on the seas, invited ship-builders from other countries, and made ships larger and more compact than those of the Danes. He also drew many of the mariners of the Rhine into the service of England, whereby the ships were more efficiently manned. In the year 873 we learn that Alfred's navy attacked and destroyed a Danish fleet of 120 ships. We are also told that he greatly encouraged commerce, as a method of practising his subjects in the art and difficulties of shipping.

Before we speak of the Norman conquest of England, we may mention a law that was made by Athelstan, that "every merchant that made three voyages to the Mediter-

anean on his own account, should be raised to the honour, and enjoy the privileges, of a gentleman." This law seems to imply, that a considerable improvement had taken place in the construction and management of English vessels, and that they were probably used for the more peaceful object of commerce, as well as for the more common, but destructive one, of war.

King Edwy, who ascended the throne of England shortly afterwards, appears to have made a great increase in his naval force, for it is said that his navy amounted to 3000 vessels, which, however, some modern writers think ought to be interpreted 300. This fleet was divided into three sections, which were constantly circumnavigating the island, as a defence against hostile fleets. It is stated that, in the reign of Ethelred, whoever possessed a certain number of hides of land, should be charged with the building of one ship or galley, and owners of a portion of a hide, a proportionate part; the hide of land then alluded to, is believed to be as much ground as a man could turn up with one plough in a year.



EARLY ENGLISH WAR-BOAT.

Edgar, in the year 959, equipped a fleet of as many, it is said, as 3000 vessels, in order to defend the kingdom against the Danes. By dividing and stationing this fleet in different parts, he awed the enemy and secured the kingdom from depredation; but, owing to these precautionary measures being gradually neglected, the Danes, with their king, Sweyn, in the year 1000, were able to land on the English coast, to drive Ethelred from his throne, and to place their own monarch thereon.

The son and successor of this Danish monarch was Canute, who is distinguished in our history, particularly by his giving his courtiers a lesson of humility, by affecting to command the waves of the sea to obey his pleasure. Our nation must, in the long run, have been improved, as far at least as naval affairs were concerned, by intercourse with the Danes, though that intercourse produced cruelty and oppression on the part of the latter towards the former. The naval superiority of the Danes had made them generally successful in all their proceedings against the English, and about this time they enlarged their open barks of twelve oars, into regular vessels of considerable size and strength; many of them were capable of holding 100 men, and some even more.

We are informed that the ships of Canute were beautifully covered over with gold and silver. It appears that they had each but one mast, which was ornamented with a gilt metal vane under the figure of some bird, to let them know which way the wind blew. At the sterns were various figures, plated with gold and silver, such as of a man, a lion, a dragon, a fish, &c. There was, in all probability, a great deal of tinsel and ornament about the royal vessels; but the craft which held the inferior people was of a rougher and ruder sort.

The ancient English chronicles afford but slender information of the progress of naval architecture and of navigation among the Anglo-Saxons; it is probable, indeed, that but little change was made from reign to reign. There appears, however, in the reign of Hardicanute a step towards luxury, which shows that the art of ship-building had been making silent progress. Earl Godwin, having murdered Prince Alfred, son of King Ethelred, to appease the anger of Hardicanute, the half-brother of the prince, presented to him a galley sumptuously gilt, and rowed by eighty men, each of whom wore on his arm a golden bracelet, weighing sixteen ounces. This description certainly implies a galley more splendid than was in use in the Mediterranean at the same period.

Navigators, accustomed to depend on the almost infallible assistance of the compass and quadrant, and of arithmetical and astronomical tables, ready constructed by men of eminence in the various departments of science, will be aston-

shed when they reflect on the intrepid spirit of the Danes and Icelanders of the ninth century, who, assuredly destitute of the compass, for which they substituted the flight of birds, dared to commit their barks, for several days, perhaps often weeks, to a boundless expanse of ocean, and trust their lives to the chance of seeing the sun and the stars. Arngrim Jonas, an Icelandic historian, tells us the way in which the flight of birds was made to act as a guide to the mariner. He says that when Flok, a celebrated Norwegian navigator, was going to set out from Shetland to Iceland, he took on board some crows, because the mariner's compass was not yet in use. When he thought he had made a considerable part of his way, he threw up one of his crows, which, seeing land astern, flew to it; whence Flok, concluding that he was nearer to Shetland than to any other land, kept on his course for some time; and then sent out another crow, which, seeing no land at all, returned to the vessel. At last, having run the greatest part of his way, another crow was sent out by him, which, seeing land ahead, immediately flew for it; and Flok, following his guide, fell in with the east end of the island. Such was the simple mode of keeping their reckoning and steering their course, practised by these bold navigators of the stormy Northern Ocean.

A people now appeared on the stage of history, who were destined to play an important part among the nations of Europe. These were the Normans, who, originally coming from Norway, gradually got a footing on the north-west coast of France, which hence obtained the name of Normandy. From this territory they made predatory excursions to any quarter where they thought advantage was to be gained; and being a hardy, robust, and courageous race, they met with great success.

Shortly before the Normans invaded Britain, they showed themselves to be powerful rivals, in maritime affairs, to the southern nations. This was brought about in a way very similar to the establishment of the Saxon rule in Britain, some centuries before. The Sicilians, being harassed by pirates, called in the assistance of the Normans, who afterwards settled among them, seemingly conforming to the habits of the people, and ultimately gained great ascendancy. They conquered a considerable part of Italy, and then directed their arms against the eastern empire. Thirteen hundred Norman knights, thirteen thousand soldiers, arms, wooden towers covered with hides, horses, &c., were transported across the Adriatic, to the eastern empire, under Robert Guiscard. The attempt was, however, ultimately unsuccessful.

The Norman invasion of England affords evidence of the small dimensions of the vessels in which William the Conqueror brought over his army from Normandy to England. The number of vessels was said to amount to three thousand; and as his army amounted only to sixty thousand, it allowed, on an average, but twenty men to each vessel: as, however, the vessels were only used as transports, to convey the army across the channel, we may thus account for the defectiveness of the vessels, considered in the light of war-ships. The fleet which Harold opposed to the Norman progress, appears to have been of a superior class of vessels; but as William's plan was to carry on the contest by land, Harold's fleet was foiled of any opportunity of producing the desired advantage.

Although the intercourse between England and France increased in these times, owing to the elevation of the Norman princes to sovereign rule in England, and although in consequence the maritime business of this country was promoted thereby, yet we find that the Norman vessels had likewise but one mast, and that the ropes came down from the top of the mast, some to the prow and others to the stern of the vessel. In the course of time these shrouds, or sail-ropes, were brought down to each side of the ship, which method, having been found by experience to be more convenient, is continued to the present time.

There are accounts delivered down to us of the discovery of Ireland, the Orkneys, the Shetland, the Hebrides, and other islands, by the northern navigators; and the Icelandic histories of the present time give narratives of intercourse established in very early ages between Iceland and Ireland. This intercourse was carried on partly with a mercantile view, and partly under the romantic, but in those days widely extended, notion of being at some time enabled to navigate on to the west, and reach the regions of the dead, and the abodes of bliss; which, for ages upon ages, were supposed to lie in that direction of the horizon where the sun drops beneath our view.

The Feroe Islands had been discovered about the latter end of the ninth century, by some Scandinavian pirates; and soon after this Iceland was colonised by Flok, the Norwegian, mentioned before. Iceland, it appears, had been discovered long before the Norwegians settled there; as many relics, in the nature of bells, books in the Irish language, and wooden crosses, were discovered by Flok, in different parts of the island: so that the Irish seem to have first set foot upon that isle. The Icelandic chronicles also relate that, about these times, the Northmen discovered a great country to the west of Ireland, which account has by many been deemed apocryphal; for, if true, they must be held to be some of the early discoverers of America; but it seems pretty clear that they made their way to Greenland in the end of the tenth century. The settlement effected in Greenland, though comprising but a small population, seems to have been very prosperous in these early times in mercantile affairs. They had bishops and priests from Europe; and paid the Pope, as an annual tribute, 2600 pounds weight of walrus-teeth, as tithe and Peter's pence. The voyage from Greenland to Iceland and Norway, and back again, consumed five years; and upon one occasion the government of Norway did not hear of the death of the bishop of Greenland, until six years after it had occurred; so that the art of navigation after all must have been in these times but at a very low pitch. We shall notice this subject more particularly at the conclusion of this paper.

The description left of Greenland by the old navigators agrees with modern observations. It presents the same dreary appearance now as it did then; looking like a vast but irregular accumulation of rocks and glaciers. Enormous icebergs floated along the coast, and filled every inlet. The awful appearance of nature in these parts of the world, its remoteness, and the horrors of the stormy seas which intervened, soon made it, in the popular belief, a land of wonders. The surrounding sea was said to be inhabited by marine giants of both sexes; and the terrific icebergs, as they moved along, were reported to be guided by invisible hands. It was also said that a man, named Hollur Geit, walked from Norway to Greenland on the ice, conducted by a goat. The northern horrors, just alluded to, are well portrayed by the Poet of the Seasons:—

Ill fares the bark with trembling wretches charged,
That, tossed amid the floating fragments, moors
Beneath the shelter of an icy isle,
While night o'erwhelms the sea, and horror looks
More horrible. Can human force endure
Th' assembled mischiefs that besiege them round?
Heart-gnawing hunger, fainting weariness,
The roar of winds and waves, the crush of ice,
Now ceasing, now renewed with louder rage,
And in dire echoes bellowing round the main.

Greenland, of which we have spoken above, seems to have been called Vinland, or Finland, from the vines which were discerned by the early discoverers as abounding in this country; and, in fact, wild vines are found growing in all the northern districts of America. A German, one of the party who first went to these coasts, having observed the vines, and having shown his companions the use of this vegetable produce, they agreed to call the place *Vinland*, or *land of wine*. Some Normans landed there soon after, and saw there many of the natives, of diminutive stature, whom they called dwarfs, in canoes covered with leather. These persons appear to have been the Esquimaux, with whom they carried on a very lucrative trade in furs. This Vinland is, however, supposed by some persons to have been Newfoundland; and if so, America must in reality have been discovered as much as five centuries before Columbus sailed so far as the West Indies; and moreover, it has been supposed that the many traditions about the West, existing in the time of Columbus, first set him to prosecute the idea of discovering another world.

The geographical knowledge of the people of Europe was very small at the time that we are writing of. What there was, was confined to the cloisters; and that was little. The abbot of Clugny, in Burgundy, thought that Paris was so remote, that he refused to comply with the request of the Count de Bourcard, who wished to establish a monastery of his order at St. Maur, in the neighbourhood of Paris. The knowledge of the monks did not oftentimes extend beyond the walls of their own residence; and they had, perhaps, never heard of places distinguished even in their own country. Hence it was that the papal dominion was so easily extended, so firmly rooted for many ages, that all the learning and genuine piety of the martyrs could, in some countries at least, but shake it; though in some

others this evil power may have been overturned. Even such a person as Gino, bishop of Bamberg, in Bavaria, had never heard of the Baltic Sea; and was vastly surprised, at sailing across it, to find that it was so broad, that from the middle of it the opposite shores seemed just like clouds in the horizon.

But, notwithstanding all this, some distinguished persons, whose interest led them to explore in order to extend their power and dominion, endeavoured to obtain a well-arranged knowledge of the world. Charlemagne of France had a large table of silver, on whose surface was engraved a map of the world as then known. His grandson Lothaire, in the war which he carried on with the other Carlovingian princes, used this precious and expensive picture of the earth, not for the guidance and direction of his soldiers, but for their more immediate necessities; so that, as it has been quaintly observed, "the silver world was soon melted down to supply the necessities of one of its kingdoms."

We have thus passed over the first half of the middle ages, which we may assume to have terminated at the era of the Crusades, at which time, in a general point of view, the practice of navigation and the art of ship-building does not seem to have advanced beyond the state in which it was left by the Carthaginians, when their country was finally depopulated by the Romans. So that, in reverting to the countries and people with whom we set out, we may observe that about the year 800 maritime affairs had sunk to so low an ebb, that there was scarcely what could be with propriety called a navy, in the world, except the galleys of Venice, and of some of the northern nations, such as the Saxons, &c. The Constantinopolitan empire, the French empire under the emperor Charlemagne, the Saracens, and other nations, were now so busily occupied in military transactions, that they had neither time nor treasure to augment and maintain their fleets.

It has been observed that had Mahomet been at all attached to naval affairs, he might have made a complete revolution in the mode of constructing and managing ships, from the enormous power which gradually accumulated in his hands. He chose, however, to propagate his creed by fire and sword; and, beginning from a small spot in Arabia as a centre, he extended his dominions by force of arms to the neighbouring countries of Syria, Persia, Asia Minor, Egypt, &c., which could be accomplished by land. Mr. Charnock, in his *History of Marine Architecture*, says—"The collection of an army, more particularly considering the simple state in which military tactics then were, was the operation of a few days, or perhaps only of a few hours. Every peasant could be transformed on the instant into a soldier. He readily became acquainted with all the duties of his profession. The productions and plunder of the districts which he overran with religious zeal, and in the inspired hope of obtaining eternal sensual felicity after death, made him totally regardless of his life, and supplied him with food, as well as with raiment; so that his sword and his Koran became the only necessary articles of equipment for the field of ravage and of glory. A navy was not to be collected by such slender means. Its formation required a species of deliberation, that was incompatible with the views of Mahomet and his followers."

We shall form some idea of the insignificant position which naval pursuits assumed in this age, by considering that in two centuries the creed of Mahomet had spread over nearly half of the then known world, without the necessity of any ships, but mere transports to convey soldiers; for the commerce with other countries was carried on almost entirely by caravans, which travelled by land.

By degrees, however, new nations, or new assemblages of people, sprang into notice, and formed the germs from which powerful nations afterwards arose. Thus, a party of Andalusians, from the south of Spain, joined themselves into one predatory band, and then ravaged the coast of Italy, and began to excite an attention to naval affairs among those who had to defend themselves from these attacks. A new republic also—Genoa—gradually assumed an imposing position; and being so near Venice, which at that time ruled the Mediterranean, began to divide with her the maritime traffic of that important sea. Another band of adventurers showed themselves in Croatia, on the eastern shore of the Adriatic Sea. Their vessels were made without decks, and were also without rostra, or beaks: they were in fact nothing more than boats, (although it is customary to apply the term *galley* to them); for a fleet of one hundred such vessels contained only three thousand men, including both sailors and soldiers.

The information which the Mediterranean nations acquired concerning Northern countries increased, and, one by one, we find new countries appearing on the page of history. Thus about the ninth century, the Roxolani, or Russians, first became known to the Constantinopolitans; and by the tenth century, sufficient was known of them to indicate their mode of navigating the Baltic. Their canoes were formed of a single tree, and in them were brought slaves, furs of every description, the spoil of their bee-hives, and the hides of their cattle, from the north towards southern districts, by means of internal seas, lakes, and rivers. These articles of merchandize were conveyed, once a year, to Constantinople, by a fleet of canoes, which passed down the Borysthenes and other rivers leading from Russia towards the Euxine Sea; and in exchange for their cargoes, carried back corn, wine, oil, and other productions, to their own country. These yearly visits gave the Russians a thirst for the wealth and luxury which they witnessed at Constantinople; and in progress of time, they formed piratical parties for seizing by force that which they had previously fairly gained by barter. These piratical excursions were made in vessels which were thus formed: a canoe was scooped out of the stem of the beech or willow, and the edges were extended upwards by planks fastened side by side, until the length of the boat attained sixty feet and the height twelve feet. These boats were built without a deck, but with two rudders and a mast, so that they moved with sails and oars: each boat would contain seventy men with their arms, and sufficient provision, consisting of water and salt fish. Twelve hundred of these boats were, in some cases, joined in one combined fleet, which descended the Borysthenes and other rivers, and landed their men wherever spoliation could be effected.

At the end of the twelfth century, the ancient semicircular line of battle was still preserved, by arranging the strongest ships in the wings, with a view to enclose the enemy as in a net. The soldiers stationed on the upper deck, or on the raised platform or fore-castle, made a close bulwark of their shields; and to give them free room to fight, the rowers sat below. When the hostile fleets approached, the sound of the trumpets and the shouts of the men gave the signal for the engagement, which commenced with a discharge of missiles on both sides. The beaks were forced against the enemies' sides; the oars were entangled; the vessels were grappled together; and the engineers endeavoured to burn the enemies' ships with the Greek fire, which was now used by Turks, Saracens, and Christians. Such was, very nearly, the mode of fighting used by the ancient Greeks and Romans, as described in our first paper*.

We shall continue the subject in our next paper, by turning our attention to the Crusades; which so greatly affected the state and condition of Europe, and which will open to us new scenes in nautical affairs, and new nations distinguished therein.

* See *Saturday Magazine*, Vol. XII., p. 38.



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